

## SUPRAMOLECULAR OXO-ANION CORROSION INHIBITORS

### ABSTRACT

A corrosion inhibitor is described which includes several supramolecular oxo-anion compositions useful for preventing the propagation of pit corrosion on aluminum and aluminum alloys. The oxo-anion compositions preferably include soluble polymeric oxidic acids comprising combinations of molybdenum, phosphorous, tungsten, and silicon. These compositions are useful as corrosion inhibitors in high-moisture, corrosive environments, such as radiators and cooling systems. For low-moisture environments, these oxo-anion compositions can be reacted with a counter-ion, such as various metals, including, but not limited to the rear earth metals, to form a soluble salt. The salt can then be adsorbed onto a carrier, such as paint pigments, which can then be applied to the surfaces of aluminum and aluminum alloys. These surface adsorbates then become sparingly soluble and are gradually released over time in the presence of an aqueous corrosive agent so as to prevent propagation of pit corrosion.